

“Translating Monitoring Results into Management Recommendations”.

Group Exercise – IMR Workshop 12/2005

(originally developed as an exercise for the SODN Technical Committee, 7/2005)

The purpose of this exercise is to evaluate options for bridging the gap between the science of monitoring results and the specifics of park resource management practices. To investigate this topic, the group will consider hypothesized monitoring results for actual SODN vital signs, and suggest potential management options and recommendations based on this scenario. We will seek to address the following questions:

- What role should the Technical Committee play in prescribing management recommendations based on monitoring results? Should such recommendations be at the scale of the entire network, or on a park-by park basis?
- Where should the line be drawn between vital signs monitoring and actual resource management?
- What are the most effective means for presenting monitoring results to managers?
- What other contextual information is needed to recommend management to decision makers? How can the SODN staff support the transfer of this information to Superintendents and other decision makers?

Totally FAKE Monitoring Scenario – Tonto NM, 2015

Background:

Pretend it is July 2015, and you are attending a Sonoran Desert Network (SODN) Technical Committee Meeting (amazingly, we are all our current positions and haven't visibly aged). You are presented with a subset of 10 years of SODN Vital Signs monitoring data for Tonto National Monument (TONT), and are asked to recommend management options to the Superintendent.

For the purposes of this short exercise, we are only providing a small subset of the monitoring data for TONT. Keep in mind that 10 years of monitoring the vital signs listed in Table 1 will generate a large volume of information (annual status reports, synthesis and trends reports, and all of the research and management activities that will tier off of monitoring results). Clear a bookshelf.

Based on the monitoring results presented in the three graphs, life history characteristics of the species in question, and monitoring objectives for the program, the SODN Ecologist concludes that Bermuda grass encroachment in the vicinity of Cave Canyon Spring has exceeded an ecological threshold and management options should be considered. Your task is to consider the information presented in the graphs and presentation and recommend management to park management.

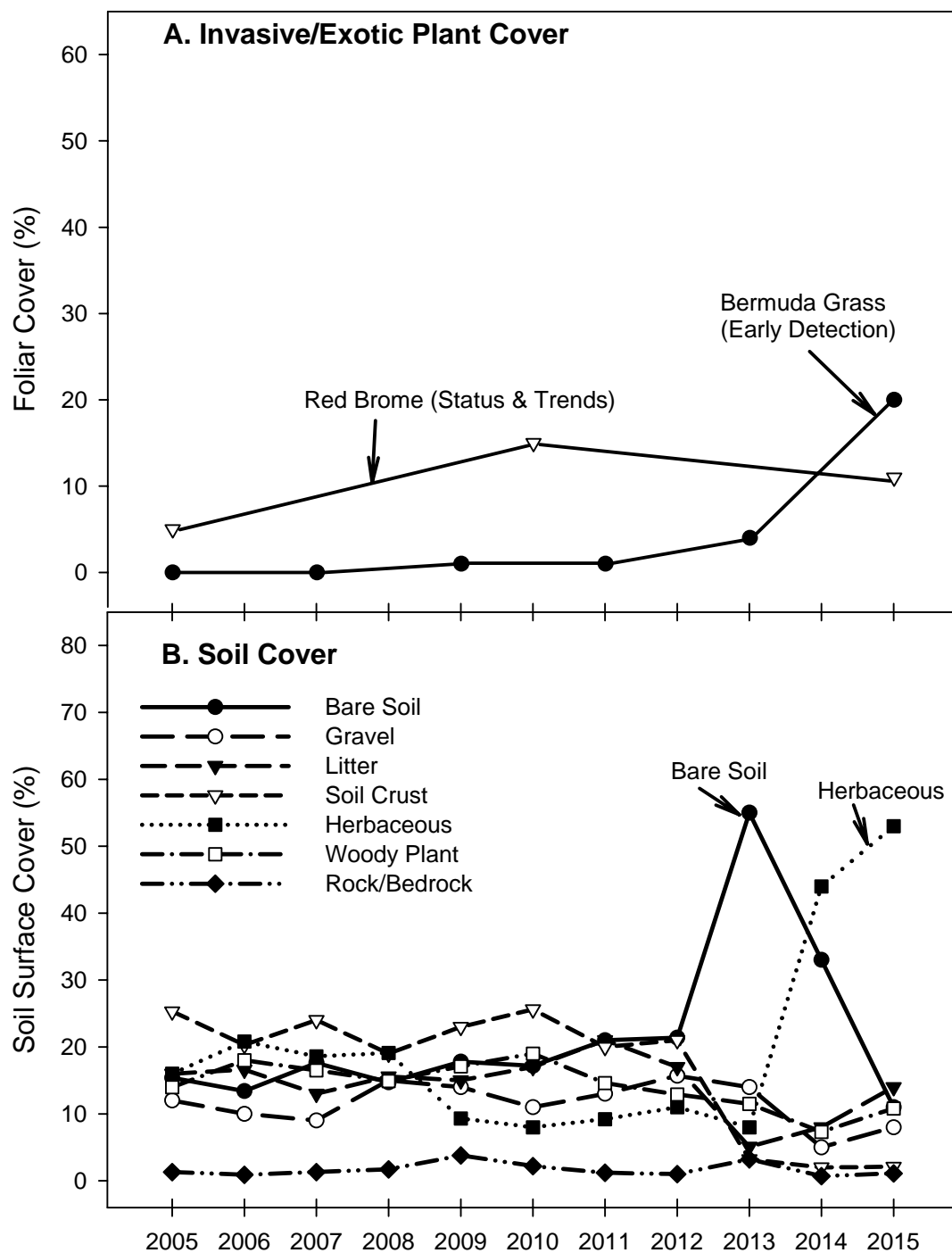
Vital Sign:	Frequency (#cycles by 2015):	FAKE Trend:
Atmospheric Deposition (NADP)	Monthly (120)	↔
Visibility and particulate matter (IMPROVE)	Monthly (120)	↔
Climate (9 parameters)	Daily (3520)	Graph#2a
Stream Channel Morphology	Every 5 years (4)*	Graph#3a
Biological Soil Crusts	Every 5 years (3)	Graph#3b
Soil Aggregate Stability	Every 5 years (4)*	Graph#3c
Soil Compaction	Every 5 years (3)	↔
Soil Cover	Annually (10)	Graph#1b
Groundwater Depth	Annually (10)	Graph#2b
Core Water Quality Parameters (H2O Temp., DO, conductivity, pH, Turbidity)	Annually (10)	↔
Nutrient Loading (N & P)	Annually (10)	↔
Invasive/Exotic Plants – Early Detection	Biennially (5)	Graph#1a
Invasive/Exotic Plants – Status and Trends	Every 5 Years	Graph#1a
Phenology	Annually (10)	See bullet
Vegetation Lifeform Abundance	Annually (10)	Graph#3b
Landbirds	Annually (10)	↔
Vegetation Structure and Composition	Every 5 years (3)	Similar to Graph#1a
Visitor Use	Monthly (120)	Small ↑
Visitor Use Impacts	Every 5 years (3)	↔
Landscape Dynamics (Land Use/ Land Cover)	Every 10 years (2)	↔

* or following a major flow event (=2013 for this exercise) in stream channels

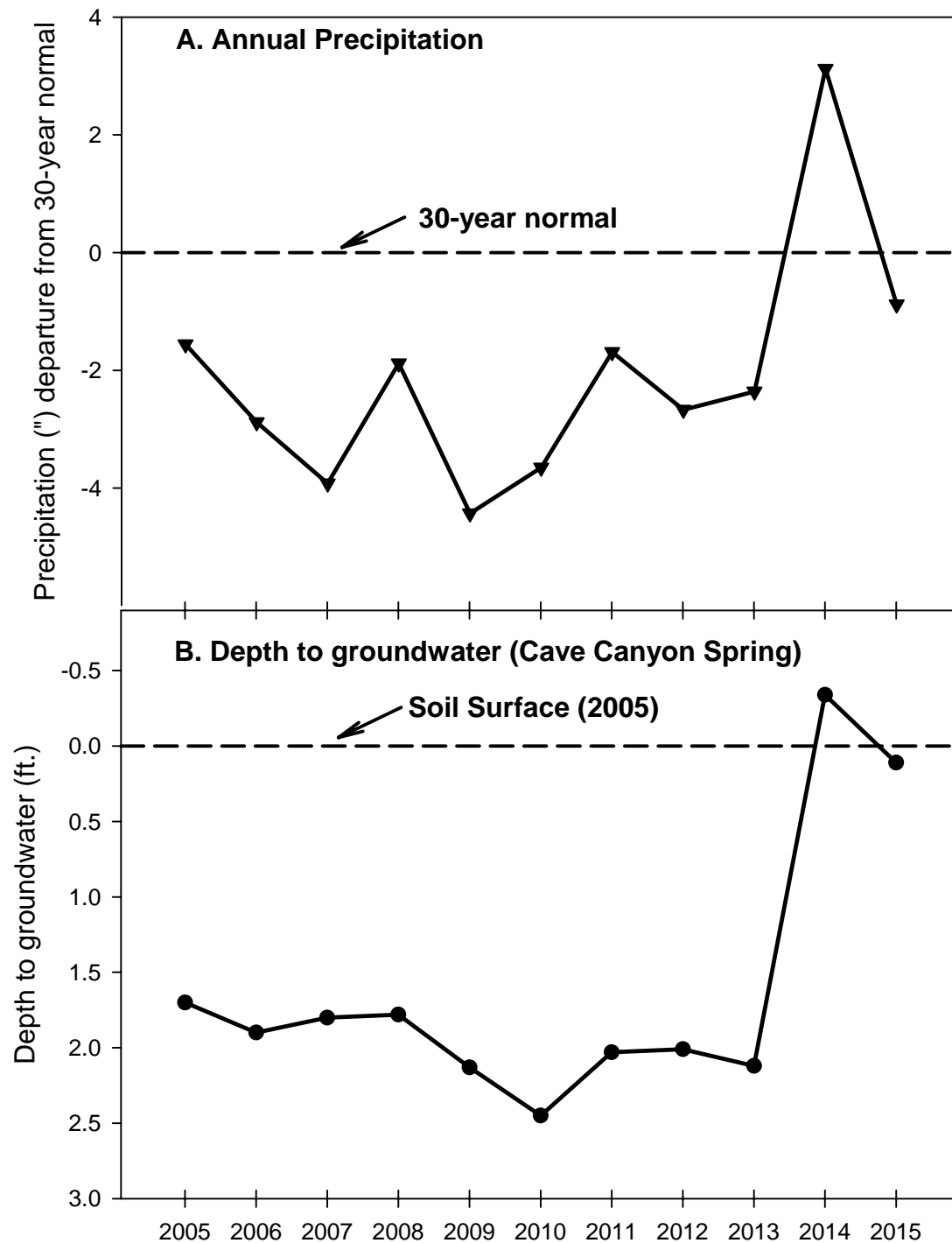
Additional background information:

- Arizona State University students have been visiting the Cave Canyon Spring area for field trips (2/year) since 2009.
- A local Audubon chapter has been using the upper drainage for birding activities since 2011.
- Tonto National Forest has been burning the upper portion (every 2-3 years) of the drainage for grazing management purposes. The leasee has been operating a cow-calf system with a moderately high-stocking rate since 2006.

Graph 1: FAKE Exotic Plant and Soil Cover Data - Tonto NM



Graph 2: FAKE Climate and Groundwater Quantity Data - Tonto NM



Graph 3: FAKE Soils and Channel Morphology Data - Tonto NM

